Miami-Dade County Board of County Commissioners

Office of the Commission Auditor

Legislative Analysis

Intergovernmental, Recreation and Cultural Affairs Committee

Wednesday, September 14, 2005
9:30 AM
Commission Chamber

Charles Anderson, CPA
Commission Auditor

111 NW First Street, Suite 1030
Miami, Florida 33128
305-375-4354

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Intergovernmental, Recreational and Cultural Affairs Committee
Meeting Agenda

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Written analyses for the below listed items are attached for your consideration in this Legislative Analysis.

Item Number(s)

2(E) & 2(W)	

If you require further analysis of these or any other agenda items, please contact Guillermo Cuadra, Chief Legislative Analyst, at (305) 375-5469.

Acknowledgements--Analysis prepared by:
Douglas Pile, Esq., Legislative Analyst

IMFR ITEM 2(E) and 2(W)
September 14, 2005

LEGISLATIVE ANALYSIS

RESOLUTION URGING THE FLORIDA LEGISLATURE TO ENACT LEGISLATION CREATING THE ELECTRIC UTILITY TASK FORCE TO STUDY THE PLACEMENT OF ELECTRIC UTILITY TRANSMISSION AND DISTRIBUTION SYSTEMS UNDERGROUND

Commissioner Javier D. Souto

RESOLUTION URGING THE FLORIDA POWER AND LIGHT TO VOLUNTARILY STUDY PLACING ELECTRIC UTILITY TRANSMISSION AND DISTRIBUTION SYSTEMS UNDERGROUND TO MINIMIZE POWER OUTAGES

Commissioner Javier D. Souto

I. SUMMARY

Resolution 2(E) urges the Florida Legislature, during the 2006 session, to enact legislation to create an Electric Utility Task Force to study the placement of electric utility transmission and distribution systems underground. Similar legislation was filed for the 2005 session, but did not pass out of committee.

Resolution 2(W) urges Florida Power and Light to voluntarily study placing electric utility transmission and distribution systems underground to minimize power outages

II. PRESENT SITUATION

The placement of electric utility transmission lines already occurs in most new residential construction in Florida. In Miami-Dade County, sec. 28-15 of the Code, requires all new subdivisions to have underground power lines. The additional cost of placing power lines underground is built into the cost of these new homes.

In the 2005 Florida legislative session, two bills attempted to create task forces to study the issue of underground power lines. SB 526 passed the Senate, but died in Messages. HB 677 passed its two committees, but died in Commerce Council.

Under SB 526, the Post Hurricane Utility Task Force would be established for the purpose of evaluating the current electric utility transmission system and potential improvements to the system to decrease damage from storms or improve recovery of the system after storm damage, and to develop recommendations for improving the emergency response to storm damage.

Under HB 677, the Electric Utility Task Force would be established for the purpose of evaluating the current electric utility transmission system, determining the feasibility of upgrading and protecting the current electric transmission system, evaluating the current and future anticipated needs caused by an increased population and changing climate conditions, analyzing electrical transformers and the best methods by which to protect them, determining the cost-effectiveness of requiring underground installation of

electric utility distribution and transmission facilities for all new construction, and determining the cost of converting overhead electric distribution and transmission facilities to underground distribution and transmission facilities when these facilities are replaced or relocated.

III. POLICY CHANGE AND IMPLICATION

These resolutions continue County policy of encouraging the placement of electric power lines underground to minimize the disruption of power, especially from hurricanes.

IV. ECONOMIC IMPACT

According to Florida Power and Light, the costs of placing power lines underground are much higher than placing them overhead on utility poles. Overhead lines are more vulnerable to damage from high winds, but underground lines are vulnerable to flooding. Consequently, underground power outages are less frequent, but may take longer to repair, than overhead lines. The cost of converting from overhead power lines to underground power lines would be placed on the requesting utility customer. (For more information, please refer to Attachment 1)

V. COMMENTS AND QUESTIONS

None.

ATTACHMENT 1

FPL's Frequently Asked Questions* **regarding underground power lines:**

Why doesn't FPL place power lines underground?

It is not that uncommon today for the smaller distribution lines in a new subdivision, for example, to be installed underground. The cost of placing the lines underground becomes the responsibility of the developer or the homeowner. In the case of the smaller distribution lines, the extra cost may be manageable for those who request it.

Isn't it better to place lines underground?

FPL does not oppose placing lines underground. However, it is important to note that there are both pros and cons to building lines overhead and underground. The reliability of overhead and underground lines is comparable. For example, both underground and overhead lines are subject to lightning damage. Although overhead lines may have more exposure than underground lines to wind damage or collisions, underground facilities are more prone to flood damage, especially in coastal areas where exposure to salt water could cause an outage. The key difference between underground and overhead lines is that it typically takes more time with underground lines to diagnose the problem and perform the repair. This difference in repair time is best characterized in days rather than hours.

What are the vulnerabilities of underground and overhead electric service?

A. There are pros and cons to both underground and overhead lines. Overhead lines are exposed to high winds, flying debris and trees. Underground lines are subject to flooding. In the end, repair and replacement time is about the same for similar equipment.

Is it more expensive to put transmission lines underground?

Yes, transmission lines supply larger areas and more customers than distribution lines, and they are much more expensive to build. The extra cost of placing these lines underground is quite significant. An equivalent underground transmission line can cost five to 15 times more than the cost of an overhead transmission line.

Why does it cost so much more?

Transmission lines can power whole cities. Underground transmission lines are much more technically complex and material intensive in order to transport larger amounts of power. Each underground transmission line is custom-made, and as such they are very expensive to design, install and maintain.

Does that mean transmission lines cannot be placed under ground?

**FPL's Frequently Asked Questions (FAQ):* provided by fpl.com
http://www.fpl.com/faqs/contents/underground.shtml &
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There are circumstances where FPL transmission lines can be and have been placed underground. If engineering complexities and cost differentials can be overcome, FPL is open to the idea of underground transmission.

If a community decides that it wishes a line to be placed underground, the residents must be willing to pay the extra costs involved. And, of course, as with any business transaction, the community requesting underground lines must be able to show that they have the means to pay for the construction.

Why can't FPL pay the difference in cost?

As a regulated utility, FPL is required to provide safe, reliable, low cost electric service to its customers. The Florida Public Service Commission authorizes the rates FPL can charge its customers and determines what costs can be included in those rates. It is the Public Service Commission's policy, and FPL agrees, that it is unfair to charge all of FPL's customers to bury a line in a particular area when a particular person or locality requested placing that line underground. Consequently, FPL may only bury lines when another entity agrees to pick up the differential cost between underground and overhead construction.

FPL has approximately 6,200 miles of transmission lines on its system. Less than 100 miles are underground.

What is FPL's standard service?

FPL and other utilities build to an overhead standard established in Florida by the Public Service Commission (PSC) as the most cost-effective type of construction. We are, however, open to putting lines underground provided the additional cost is covered by or for the user.

Why was overhead established as the standard?

Overhead service was established as the standard construction for utilities because over time it has been the most cost-effective design. When alternatives like underground service are requested by developers or mandated by cities, the customer benefiting from the alternative design pays the additional cost.

Is FPL opposed to underground service?

Absolutely not. Already more than one-third of the neighborhood power lines in FPL's system are underground. We do, however, want our customers to understand the pros and cons of each type of service as it relates to performance, reliability and the cost of service, so they can make informed decisions if they are contemplating a change.

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ATTACHMENT 1

What are the different strengths and weaknesses of overhead and underground service that affect performance and reliability?

While underground facilities are not as susceptible to wind and debris-blown damage, they are more susceptible to water intrusion and local flood damage, which can make repairs more time consuming and costly.

Overhead facility damage is easier to locate than underground and can generally be repaired quicker.

Underground interruptions may be less frequent, but typically last longer due to more complex repair requirements.

Following recent hurricanes, we've found that areas that took the longest to repair were generally those served by underground facilities still flooded days after the storm passed.

Damage and corrosion of underground electrical systems often shows up days or even months later, causing additional outages and inconvenience to customers.

Storm winds can damage both types of systems causing outages. Overhead systems face outages resulting from trees and debris blowing into lines. Underground systems face outages from trees collapsing on above-ground transformers and switch boxes or from tree root systems uprooting buried cable when trees topple.

Also, we often forget that while a neighborhood may be locally served by underground cable, all electric service eventually comes back above ground and connects to overhead service, either in the neighborhood next door, or further down the street where overhead main lines and transmission lines move power from power plants and substations into our neighborhoods. Thus, exposure to above ground electric service from weather, animals, and trees is never fully eliminated.

Why is there a differential cost for new underground service?

It is the Public Service Commission's position, and FPL agrees, that it would be unfair to charge all FPL's customers a higher price to cover the cost of new undergrounding, since not everyone would get the benefit nor necessarily be willing or able to pay the higher cost.

Why must the customer or requesting party pay for the conversion from overhead to underground?

Similar to new service requests for underground, conversions take into account the requirement that FPL provide electric service to all its customers in the most cost-effective manner available and this is typically an overhead system. (There are some

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exceptions for very high density designated underground areas [DUGA], such as downtown Miami and Ft. Lauderdale.)

In order to ensure that customers throughout our service territory are being treated fairly and that customers in one area are not subsidizing underground facilities being built or converted in another area, the PSC enacted a rule requiring that the party seeking a conversion from overhead to underground facilities must pay for the associated cost of conversion. [See Florida Administrative Code 25-6.115.] State law also prohibits FPL and other public utilities from making or giving any undue or unreasonable preference or advantage to any person or locality. [See Florida Statutes 366.03.]

But I live in a community with underground service and I didn't pay anything extra – why is that?

You may not realize it, but you did. For aesthetic reasons, many developers contract with FPL and other utility companies to bury their lines when they are first laying out a new neighborhood. Thus the added cost for underground service and other community amenities is typically included in the price you pay for a new home.

What does underground service cost in a new subdivision, versus new overhead service?

In general the basic costs are about a third more, but may be still more if additional work needs to be done on supporting electrical facilities such as putting a section of an adjacent main line underground. The builder/homeowner is responsible for paying the cost difference between new overhead and new underground facilities prior to construction. The detailed cost components are provided in an FPL tariff (rules and regulations for providing electric service) that is available from your local FPL project manager [see FPL Electric Tariff sheets 6.090-6.100].

What are my options if I live in an established neighborhood served by overhead electrical service and I want to convert my service to underground?

You have a couple of options depending on what you want to do, what your neighbors want to do and/or your city. You can personally arrange to have your individual service drop converted from overhead to underground or seek conversion of all the neighborhood electrical facilities through your city or homeowners association.

Converting an older community's power lines from overhead to underground, however, can be very expensive and disruptive, especially in highly urbanized areas. In conversion, the applicant pays the total cost of the conversion, since service already exists that must be dismantled in addition to installing a whole new system.

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ATTACHMENT 1

Can you be more specific about some of the costs I may be facing if I pursue converting my individual overhead service to underground?

The costs can vary widely and depend on variables such as:

Whether your local government's electrical authority requires electrical installation or wiring to be upgraded as part of your conversion.

Whether an electrician (or another tradesperson) will do the work to dig and backfill the trench needed to bring the underground facilities from the easement to the building.

The length of trench that's needed to accommodate the conversion.

Whether the existing overhead "weatherhead" extends through the roof of the building, in which case you may need to incur the cost of roof repair as well as paint and aesthetics.

These costs and arrangements are separate from the work FPL would handle and are the responsibility of the customer, just as they would be in seeking to convert from a septic tank to a sewer system or other similar efforts.

Who can request that all overhead facilities in a community be converted to underground?

Existing neighborhood overhead lines can be converted if a community so desires. Anyone willing and able to pay the cost for the conversion and secure the necessary easements to place the facilities on private property may submit a written request. This includes local governments, large or small communities, builders and developers in a contained specific area such as a subdivision.

Does conversion from overhead to underground require a unanimous agreement from all property owners within the conversion area before FPL will convert its facilities to underground?

Generally, yes due to the following preconditions for such conversion:

Easements: All the easements (property use agreements from owners) must be acquired before an underground electrical distribution system can be installed. To the extent FPL can design around an occasional customer who refuses to provide an easement -- without jeopardizing the integrity of its electrical system -- FPL will attempt to do so. In the case of converting to underground, this also means deciding whose property will accept the new padmounted transformers that sit above ground, as well as where to put fairly large, above ground switch cabinets that serve whole groups of homes as part of the underground grid.

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Cost: It's also necessary for all the requesting parties to determine in advance and agree on how all the conversion costs are going to be allocated among those benefiting from the project before FPL can begin construction. Otherwise subsequent disagreements can bog down the conversion effort and drive up costs.

Since FPL's tariff requires full payment of the calculated customer contribution amount prior to beginning construction, customers may want to consider other options to offset some of the project costs. These options could include taking responsibility for doing some of the boring and/or trenching and installing the conduit. Regardless of who does the work, the installation must meet FPL standards for safety and reliability and local electrical and building code requirements.

Are there different ways the conversion of a full neighborhood or city might be financed?

Yes. For cities, FPL recently established, with PSC approval, a mechanism to recover the costs associated with converting from overhead to underground by adding a fee to customer bills.

Additionally, Chapters 197 and 170 of the Florida Statutes allow municipalities to fund underground conversion costs by levying special assessments imposed on tax bills. Landowners benefiting from the conversion must be identified and the special assessment may be collected directly from the local government imposing the assessment or through annual property tax bills.

Another Florida Statute --125.01(q) -- lets counties establish municipal service benefit units and municipal service taxing units in certain areas. These governmental units may levy service charges, special assessments or taxes within these units to fund underground conversion costs.

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